

Rec'd 4/8/94

ST104252

KEI-P91-1201.R3
June 2, 1993

Wells Fargo Bank
525 Market Street, 17th Floor
MAC #0103-171
San Francisco, CA 94105

Attention: Mr. Joe Schrader

RE: Preliminary Ground Water Investigation at
Wells Fargo Bank
(Walter Blumert Co., Inc.)
490 - 43rd Street
Oakland, California

(MW1-3 Install. Rep)

Dear Mr. Schrader:

This report presents the results of Kaprealian Engineering, Inc's. (KEI) most recent soil and ground water investigation for the referenced site, in accordance with KEI's proposal (KEI-P91-1201.P2) dated June 29, 1992. The purpose of the investigation was to further define the extent of soil contamination, and to determine if the ground water beneath the site has been impacted by unleaded gasoline or paint thinner contamination. The scope of the work performed by KEI consisted of the following:

- Coordination with regulatory agencies
- Geologic logging of three borings for the installation of three monitoring wells
- Soil sampling
- Ground water monitoring, purging, and sampling
- Laboratory analyses
- Data analysis, interpretation, and report preparation

SITE DESCRIPTION AND BACKGROUND

The subject site occupies the north-northeastern corner of the intersection of 43rd Street and Telegraph Avenue in Oakland, California. The site formerly contained underground unleaded gasoline and paint thinner storage tanks.

KEI's initial field work was conducted on December 11, 1991, when one underground 1,000 gallon regular unleaded gasoline storage tank and one 350 gallon underground paint thinner storage tank were

removed from the site. The tanks were made of steel, and no apparent holes or cracks were observed in the unleaded gasoline storage tank. ~~However, the paint thinner storage tank was partially deteriorated on top.~~ Tank removal and soil sampling were performed in the presence of Ms. Susan Hugo of the Alameda County Health Care Services (ACHCS) Agency. Inspector Christian of the City of Oakland Fire Department was also present during tank removal.

Two soil samples, labeled A1 and A2, were collected from beneath the gasoline storage tank and one sample, labeled B1, was collected from beneath the paint thinner tank at depths of approximately 10 feet below grade. The undisturbed samples were collected from bulk material excavated by backhoe.

In an attempt to remove as much of the contaminated soil as possible, KEI returned to the site on March 31, 1992, in order to observe additional soil excavation in both the gasoline and the paint thinner tank pits. Soil was excavated in the tank pits to depths of approximately 11.5 feet below grade. One soil sample, labeled A(11.5), was collected from beneath the former gasoline tank and one soil sample, labeled B(11.5), was collected from beneath sample point location B1 at depths of about 11.5 feet below grade. Both soil samples were moist. Ground water was observed at the bottom of the excavation. Four additional soil samples, labeled SW-N, SW-S, SW-E, and SW-W, were collected from the sidewalls of the tank pit excavation at depths of about 10 feet below grade. Ms. Hugo of the ACHCS was again present during soil sampling activities. The sample point locations are shown on the attached Figure 3. The excavated soil was stockpiled on-site and sampled. Per the direction of Ms. Hugo and for safety considerations, the tank pit was backfilled with clean imported soil.

All samples were analyzed by Sequoia Analytical Laboratory in Concord, California. The samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline by EPA method 5030 in conjunction with modified 8015, and benzene, toluene, xylenes, and ethylbenzene (BTX&E) by EPA method 8020. In addition, ~~samples A1, A2, and B1 were analyzed for TPH as diesel by EPA method 3550 in conjunction with modified 8015, and samples A(11.5), B(11.5), SW-N, SW-S, SW-E, and SW-W were also analyzed for TPH as paint thinner by EPA method 3550 in conjunction with modified 8015.~~

Analytical results of the soil samples indicated levels of TPH as gasoline ranging from 110 ppm to 720 ppm, except for samples SW-N and SW-W, which showed 3.6 ppm and non-detectable levels, respectively. TPH as diesel was detected in samples A1, A2, and B1 at levels ranging from 7.8 ppm to 76 ppm. TPH as paint thinner was detected at levels ranging from non-detectable to 25 ppm, except

for sample SW-E, which showed ~~190 ppm~~. The results of the soil analyses are summarized in Table 4.

To continue defining the extent of soil contamination beneath the site, and to determine if the ground water beneath the site had been impacted by hydrocarbon contamination, KEI proposed the installation of three monitoring wells in a letter accompanying KEI's report (KEI-91-1201.R1) dated June 29, 1992.

RECENT FIELD ACTIVITIES

On April 12, 1993, three two-inch diameter monitoring wells (designated as MW1, MW2, and MW3 on the attached Figure 1) were installed at and in the vicinity of the site. The wells were drilled, constructed, and completed in accordance with the guidelines of the Regional Water Quality Control Board (RWQCB), and California Well Standards, per Bulletin 74-90. The subsurface materials penetrated and details of the construction of the wells are described in the attached Boring Logs and Well Construction Diagrams, respectively.

The three wells were each drilled and completed to total depths ranging from 22 to 23 feet below grade. Ground water was encountered at depths ranging from 12 to 12.5 feet below grade during drilling. Soil samples were collected for laboratory analysis and lithologic logging purposes at a maximum spacing of 5 foot intervals, at significant changes in lithology, at obvious areas of contamination, and at or within the soil/ground water interface, beginning at a depth of approximately 4 to 5 feet below grade and continuing until ground water was encountered. A representative soil sample of the saturated zone was collected from the boring for well MW3 at a depth of 14 to 15 feet below grade and submitted for particle size analysis (sieve and hydrometer), for verification of filter pack and well screen design. Other soil sampling conducted below the water table was for lithologic logging purposes only. The undisturbed soil samples were collected by driving a California-modified, split-spoon sampler (lined with brass liners) ahead of the drilling augers. The two-inch diameter brass liners holding the samples were sealed with aluminum foil, plastic caps and tape, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory.

Each well casing was installed with a watertight cap and a padlock. A round, watertight, flush-mounted well cover was cemented in place over each well casing. The surface of each well cover was surveyed by Kier & Wright of Pleasanton, California, to Mean Sea Level (MSL) and to a vertical accuracy of 0.01 foot.

The wells (MW1 through MW3) were developed on April 22, 1993. Prior to development, the wells were checked for the depth to the water table (by the use of an electronic sounder) and the presence of free product (by the use of an interface probe or paste tape). No free product was noted in any of the wells. After recording the monitoring data, the wells were each purged (by the use of a surface pump) of between 40 to 45 gallons of water, until the evacuated water was clear and free of visible suspended sediment. Monitoring and well development data are summarized in Table 1.

The wells were sampled on April 29, 1993. Prior to sampling, the wells were checked for the depth to the water table and the presence of free product or a sheen. No free product or sheen was noted in any of the wells. After recording the monitoring data, the wells were each purged of between 8 and 9 gallons of water by the use of a surface pump. Water samples were then collected by the use of a clean Teflon bailer. The samples were decanted into clean glass VOA vials and/or one-liter amber bottles, as appropriate, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory. Monitoring data are summarized in Table 1.

ANALYTICAL RESULTS

Water and selected soil samples from the borings of MW1 through MW3 were analyzed at Sequoia Analytical Laboratory. All samples analyzed were accompanied by properly executed Chain of Custody documentation. The samples were analyzed for TPH as gasoline by EPA method 5030/modified 8015, BTEX by EPA method 8020, TPH as diesel by EPA methods 3550/modified 8015 (soil) and 3510/modified 8015 (water), and TPH as paint thinner by EPA methods 3550/modified 8015 (soil) and 3510/3520/modified 8015 (water).

The results of the soil analyses are summarized in Table 3, and the results of the water analyses are summarized in Table 2. The concentrations of TPH as gasoline, benzene, and TPH as paint thinner detected in the ground water samples collected on April 29, 1993, are shown on the attached Figure 2. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

HYDROLOGY AND GEOLOGY

On April 29, 1993, the measured depth to ground water in the monitoring wells ranged from 11.03 to 11.27 feet below grade. The ground water flow direction appeared to be to the south-southwest, as shown on the attached Figure 1. The hydraulic gradient at the site on April 29, 1993, was approximately 0.008, based on water level data collected from the monitoring wells prior to purging.

Based on review of regional geologic maps (USGS, Miscellaneous Geologic Investigations, Map I-239, Areal and Engineering Geology of the Oakland West Quadrangle, California, by D.H. Radbruch, 1957), the subject site is underlain by the Quaternary-age alluvial fan deposits of the Temescal formation (Qtz). These deposits are described as typically consisting of clayey gravel, sandy and silty clays, and sand-clay-silt mixtures. The depth to bedrock is presently unknown to KEI.

Based on the results of our subsurface study, the site is underlain by alluvium to the maximum depth explored (23 feet below grade). The alluvium underlying the site consists predominantly of clayey or sandy silt, with lesser amounts of clayey or silty gravel and clayey or silty sand.

As of April 1993, the unsaturated zone beneath the site is approximately 11 feet thick and consists mainly of clayey or sandy silt, clayey gravel, clayey or silty sand, and clay, in order of decreasing abundance.

The first water bearing units beneath the site (first aquifer) also consist largely of sandy or clayey silt, with subordinate amounts of silty gravel and silty sand. The units immediately above and below the water table consist of gravelly or sandy silt in MW1 and MW3, and silty or clayey gravel in MW2.

The particle size analysis (sieve and hydrometer) of the soil sample collected from the saturated zone in monitoring well MW3 at a depth of 14 to 15 feet below grade indicates that the sample is composed of approximately 65% sand, 33% silt and clay, and 2% gravel. The sample is classified as silty sand with gravel (SM). The results of the particle size analysis are shown on the attached Plate 1.

DISTRIBUTION

Copies of this report should be sent to the ACHCS, and to the RWQCB, San Francisco Bay Region.

LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in the extent and concentration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

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The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state-certified laboratory. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, regarding the above, including laboratory analyses, except that our services have been performed in accordance with generally accepted professional principles and practices existing for such work.

Should you have any questions on this report, please call us at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.



Thomas J. Berkins
Senior Environmental Engineer



Joel G. Greger, C.E.G.
Senior Engineering Geologist

License No. 1633
Exp. Date 6/30/94



Robert H. Kezerian
Project Engineer

/bp

Attachments: Tables 1 through 4
Location Map
Figures 1, 2 & 3
Boring Logs
Well Construction Diagrams
Particle Size Analysis - Plate 1
Laboratory Analyses
Chain of Custody documentation

TABLE 1

SUMMARY OF GROUND WATER MONITORING AND PURGING DATA

<u>Well #</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)</u>	<u>Product Thickness</u>	<u>Sheen</u>	<u>Water Purged (gallons)</u>
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(Monitored and Sampled on April 29, 1993)

MW1	80.15	11.27	0	No	9
MW2	79.96	11.03	0	No	8
MW3	80.06	11.15	0	No	8

(Monitored and Developed on April 22, 1993)

MW1	80.61	10.81	0	--	45
MW2	80.31	10.68	0	--	40
MW3	80.53	10.68	0	--	45

<u>Well #</u>	<u>Surface Elevation* (feet)</u>
MW1	91.42
MW2	90.99
MW3	91.21

-- Sheen determination was not performed.

* The elevations of the tops of the well covers have been surveyed relative to MSL, per the City of Oakland Benchmark #2859. Cut square midpoint of return at the southeast corner of 42nd and 41st (Elevation = 83.05 feet MSL).

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TABLE 2
SUMMARY OF LABORATORY ANALYSES
WATER

<u>Sample</u> <u>Number</u>	<u>TPH as</u> <u>Diesel</u>	<u>TPH as</u> <u>Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl-</u> <u>benzene</u>	<u>TPH as</u> <u>Paint Thinner</u>
(Collected on April 29, 1993)							
MW1	650*	290	31	1.9	5.4	2.7	600
MW2	3,600*	11,000	2,400	51	160	76	4,100
MW3	4,300*	8,500	840	17	42	40	5,800

* Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel. *weathered gasoline?*

Results in parts per billion (ppb), unless otherwise indicated.

TABLE 3
SUMMARY OF LABORATORY ANALYSES
SOIL

<u>Sample Number</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl-benzene</u>	<u>TPH as Paint Thinner</u>
(Collected on April 12 and 13, 1993)							
MW1(5)	ND	ND	ND	ND	ND	ND	ND
MW1(9.5)	2.2*	20	0.069	0.019	0.090	0.030	ND
MW1(11.5)	6.9*	210	1.2	0.90	2.6	1.2	11+
MW2(5)	ND	ND	ND	ND	ND	ND	ND
MW2(7.5)	9.3**	66♦	0.24	ND	0.35	0.026	15
MW2(10)	190**	1,000♦	3.4	ND	20	ND	320
MW2(11.5)	180**	710♦	3.0	0.71	14	0.68	310
MW3(5)	4.7**	ND	ND	ND	ND	ND	7.6
MW3(10)	590**	2,000♦	2.6	0.88	28	0.74	1,000
MW3(12)	53**	630♦	0.86	0.12	2.3	1.1	89

NOTE: The soil samples were collected at the depths below grade indicated in the () of the respective sample number.

- * Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
- ** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.
- ♦ Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- + Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a paint thinner and non-paint thinner mixture.

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.

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TABLE 4

SUMMARY OF LABORATORY ANALYSES
 SOIL

<u>Sample</u>	<u>Depth (feet)</u>	<u>TPH as Diesel</u>	<u>TPH as Paint Thinner</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethylbenzene</u>
(Collected on December 11, 1991)								
A1	10.0	7.8	--	110	0.88	6.5	22	1.9
A2	10.0	37	--	220	0.050	0.12	4.6	0.48
B1	10.0	76	--	490	0.43	0.48	18	19
(Collected on March 31, 1992)								
A(11.5)	11.5	--	10	480	1.4	1.3	9.9	7.2
B(11.5)	11.5	--	25	440	0.55	ND	16	3.3
SW-N	10.0	--	ND	3.6	ND	ND	0.050	0.0072
SW-S	10.0	--	7.6	190	0.20	0.12	1.9	1.2
SW-E	10.0	--	190	720	0.76	0.91	30	5.4
SW-W	10.0	--	ND	ND	ND	ND	ND	ND

-- Indicates analysis was not performed.

ND = Non-detectable.

Results are in parts per million (ppm), unless otherwise indicated.



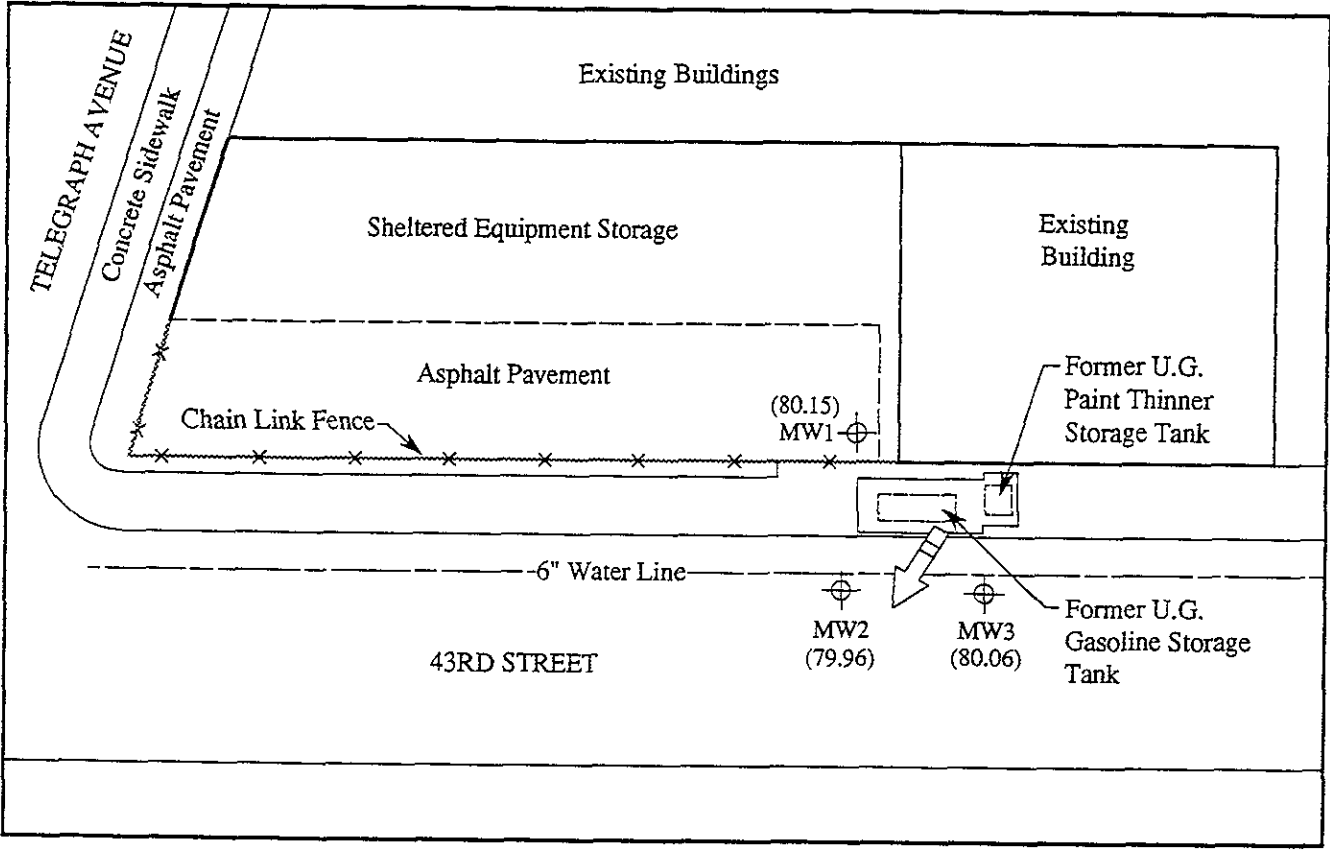
Base modified from 7.5 minute U.S.G.S. Oakland East and West Quadrangles
 (both photorevised 1980)






KEI
 KAPREALIAN ENGINEERING
 INCORPORATED

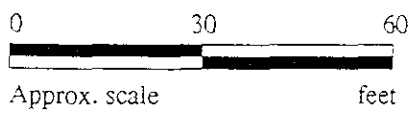
WELLS FARGO BANK
 (WALTER BLUMERT CO, INC.)
 490 43RD STREET
 OAKLAND, CA

LOCATION
 MAP



LEGEND

-  Monitoring well
-  Ground water elevation in feet above Mean Sea Level
-  Direction of ground water flow

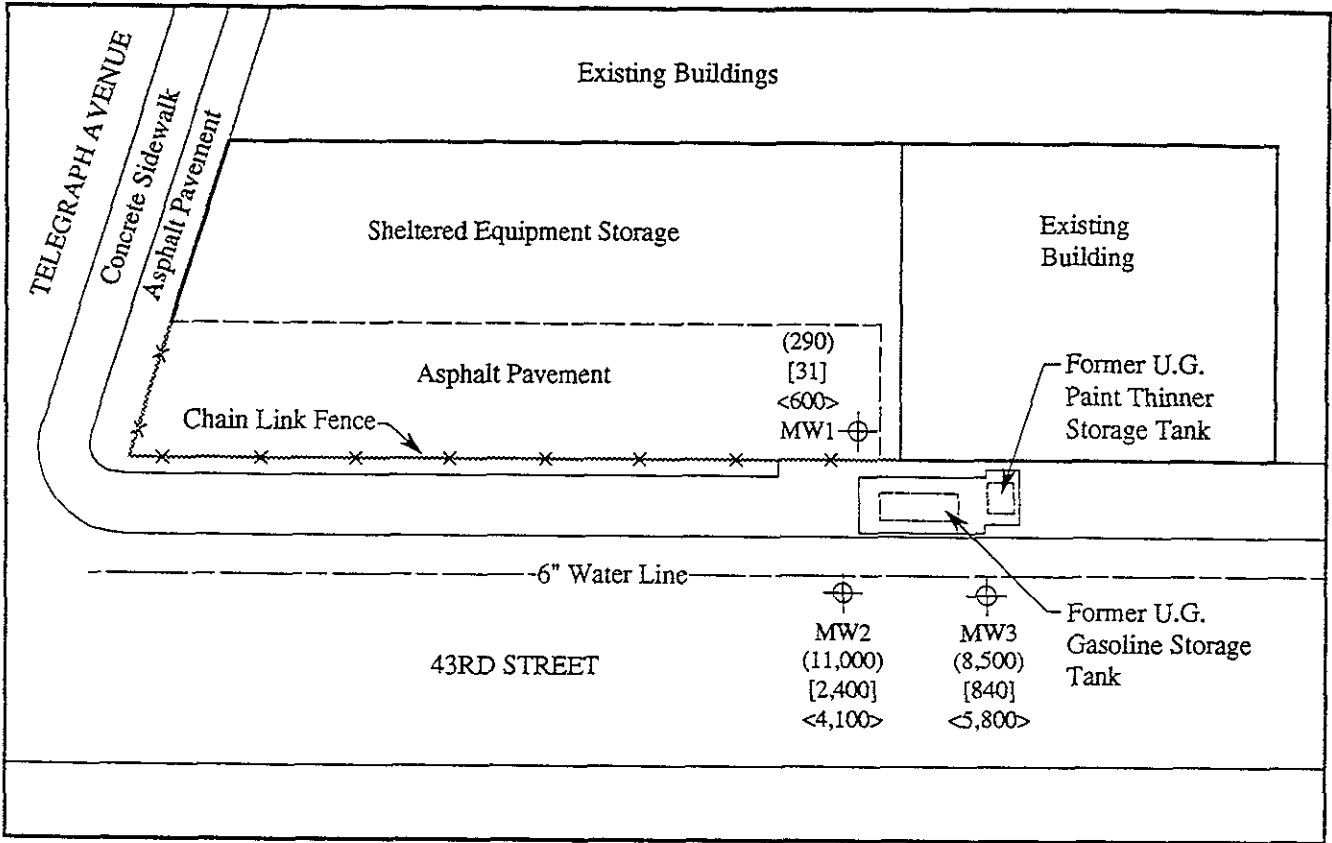


GROUND WATER FLOW DIRECTION MAP FOR THE APRIL 29, 1993 MONITORING EVENT



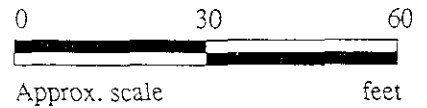
WELLS FARGO BANK
(WALTER BLUMERT CO, INC.)
490 43RD STREET
OAKLAND, CALIFORNIA

FIGURE
1



LEGEND

- ⊕ Monitoring well
- () Concentration of TPH as gasoline in ppb
- [] Concentration of benzene in ppb
- < > Concentration of TPH as paint thinner in ppb

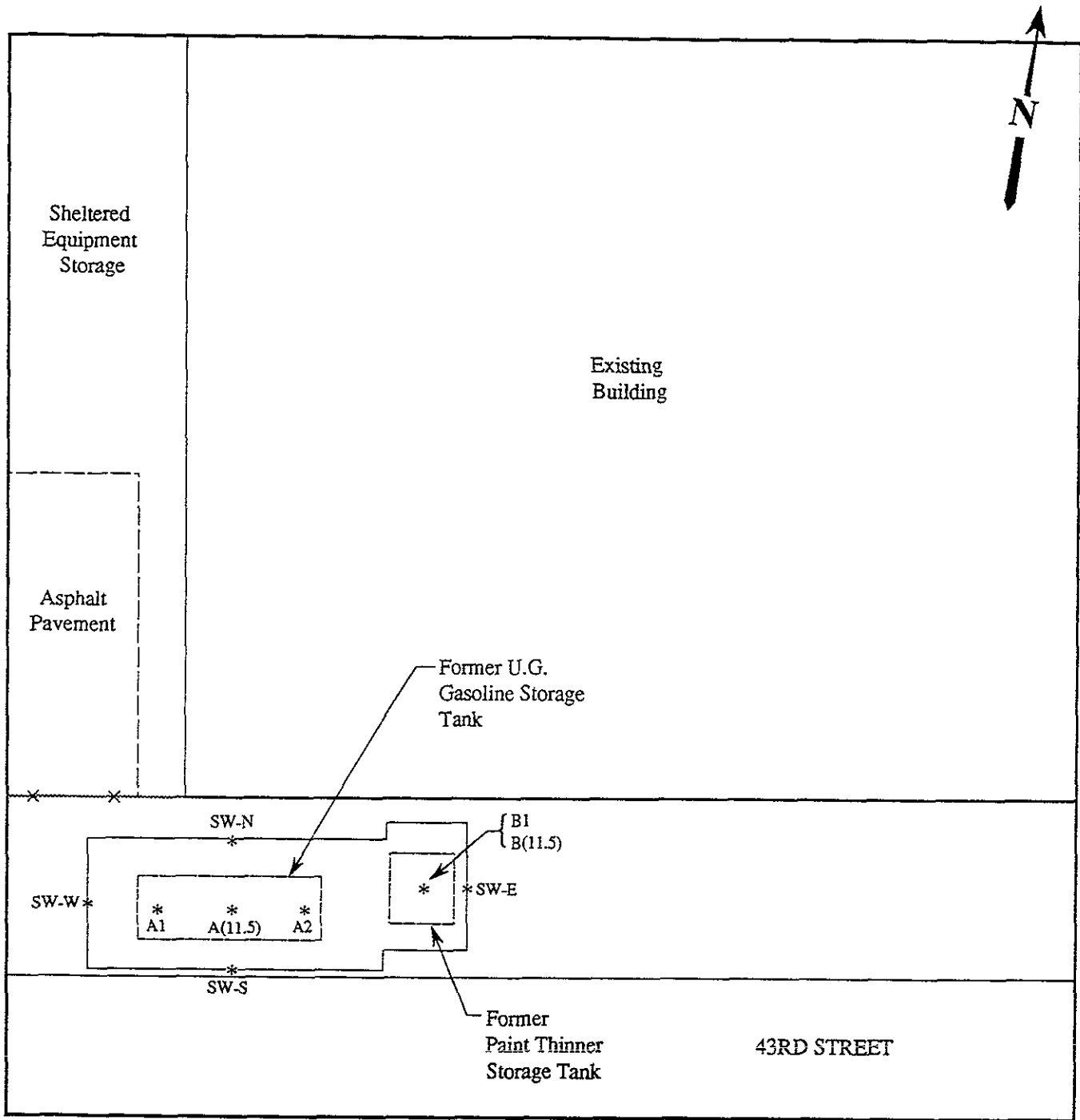


PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON APRIL 29, 1993



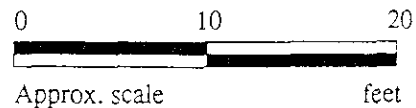
WELLS FARGO BANK
(WALTER BLUMERT CO., INC.)
490 43RD STREET
OAKLAND, CALIFORNIA

FIGURE
2



LEGEND

* Sample point location



SOIL SAMPLE POINT LOCATION MAP



WELLS FARGO BANK
 (WALTER BLUMERT CO, INC.)
 490 43RD STREET
 OAKLAND, CALIFORNIA

FIGURE
3



KAPREALIAN ENGINEERING
INCORPORATED

MAJOR DIVISIONS	SYMBOLS	TYPICAL SOIL DESCRIPTIONS
<u>GRAVELS</u> (More than 1/2 of coarse fraction > No. 4 sieve size)	GW	Well graded gravels or gravel - sand mixtures, little or no fines
	GP	Poorly graded gravels or gravel - sand mixtures, little or no fines
	GM	Silty gravels, gravel - sand - silt mixtures
	GC	Clayey gravels, gravel - sand - clay mixtures
<u>SANDS</u> (More than 1/2 of coarse fraction < No. 4 sieve size)	SW	Well graded sands or gravelly sands, little or no fines
	SP	Poorly graded sands or gravelly sands, little or no fines
	SM	Silty sands, sand - silt mixtures
	SC	Clayey sands, sand - clay mixtures
<u>SILTS & CLAYS</u> <u>LL < 50</u>	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
<u>SILTS & CLAYS</u> <u>LL > 50</u>	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
<u>HIGHLY ORGANIC SOILS</u>	Pt	Peat and other highly organic soils
<u>DUAL (TRANSITION) SOILS</u>		Soil characteristics are transitional between the soil classifications listed above

CLASSIFICATION CHART (Unified Soil Classification System)

BORING LOG

Project No. KEI-P91-1201	Boring Diameter 8"	Logged By <i>JGG</i> D.L. <i>LEG1633</i>
	Casing Diameter 2"	
Project Name Wells Fargo Bank 490 43rd. Street, Oakland	Well Cover Elevation	Date Drilled April 12, 1993
Boring No. MW1	Drilling Method Hollow-stem Auger	Drilling Company Great Sierra Exploration

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel base.
			ML	Clayey silt, trace fine-grained sand, stiff, moist, black.
			CL	Silty clay, estimated at 10-15% sand and trace gravel, very stiff, moist, dark brown with iron oxide staining.
6/11/13		5	ML	Silt with sand, estimated at 10-15% clay and trace gravel, very stiff, moist, brown.
			GC	Clayey gravel with sand, gravel to 2 inches in diameter, dense to very dense, moist, dark greenish gray and olive brown, mottled.
14/23/35		10	GM	Silty gravel with sand, trace clay, gravel to 5/8 inch in diameter, very dense, very moist, olive gray.
15/28/42	▼		ML	Gravelly silt, estimated at 10-15% sand, gravel to 1 inch in diameter, hard, friable, moist to very moist, dark greenish gray and olive brown.
16/33/41			ML	Gravelly silt as above, except olive brown only.
		15		Sandy silt, estimated at 10-15% gravel to 1 inch in diameter, hard, moist, olive gray and dark greenish gray, mottled.
7/11/14			GM	Silty gravel with sand, estimated at 15% silt and 5% clay, gravel to 1 inch in diameter, medium dense, wet, dark olive gray, grades to dark yellowish brown.
7/11/14		20	ML	Sandy silt, estimated at 10-15% gravel, sand is predominantly fine-grained, very stiff, wet, olive brown.
11/			SM	Silty sand, estimated at 10-15% gravel, medium dense, wet, cohesive, olive brown.

BORING LOG

Project No. KEI-P91-1201	Boring Diameter 8"	Logged By <i>JGG</i> D.L. <i>LEG 1633</i>
	Casing Diameter 2"	
Project Name Wells Fargo Bank 490 43rd. Street, Oakland	Well Cover Elevation	Date Drilled April 12, 1993
Boring No. MW2	Drilling Method Hollow-stem Auger	Drilling Company Great Sierra Exploration

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel base.
			ML	Clayey silt, trace sand and gravel, very stiff, moist, black.
			CL	Silty clay, estimated at 10-15% sand, trace gravel, very stiff, moist, dark brown, with iron oxide staining.
7/8/11		5	ML	Clayey silt, estimated at 10-15% sand, very stiff, moist, dark brown, with iron oxide staining.
			CL	Silty clay, very stiff, moist, dark brown, mottled, dark gray.
			ML	Silt with fine-grained sand, stiff, moist, olive gray.
7/9/11			GC	Clayey gravel with sand, estimated at 5-10% silt, gravel to 1-1/2 inches in diameter, medium dense, moist, dark olive gray.
14/9/15		10		Clayey gravel as above, except very moist to wet.
7/12/13	▼		GM	Silty gravel with sand, medium dense, very moist, dark olive gray.
			SM	Silty sand, estimated at 15-20% silt and trace gravel to 1/2 inch in diameter, medium dense, moist, dark greenish gray.
12/14/13		15	GM	Silty gravel with sand, trace clay, medium dense, very moist to wet, olive to olive gray.
10/10/10			ML	Silt with clay, estimated at 10-15% fine-grained sand, very stiff, moist, yellowish brown.
			GM	Silty gravel with sand, medium dense, wet, dark yellowish brown.
		20	ML	Silt with sand, estimated at 5-10% clay, very stiff, moist, yellowish brown.
8/10/12			ML	Silt with clay, estimated at 10-15% fine-grained sand, very stiff, moist yellowish brown.

TOTAL DEPTH: 22'

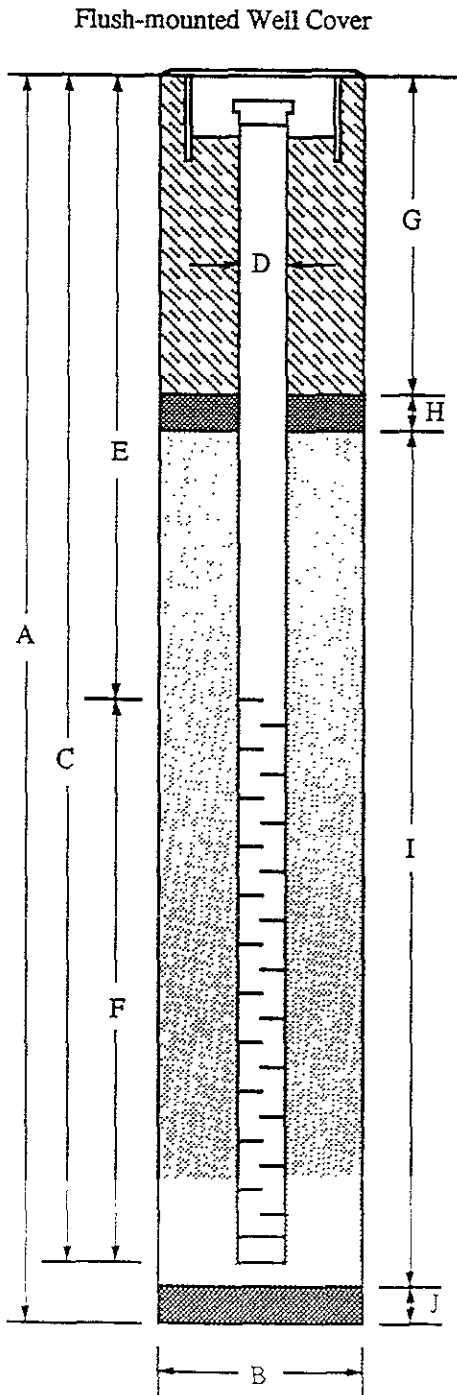
WELL CONSTRUCTION DIAGRAM

PROJECT NAME: Wells Fargo Bank, 490 43rd. Street, Oakland

WELL NO.: MW2

PROJECT NUMBER: KEI-P91-1201

WELL PERMIT NO.: ACFC&WCD #53077



- A. Total Depth : 22'
- B. Boring Diameter: 8"
- Drilling Method: Hollow Stem Auger
- C. Casing Length: 22'
- Material: Schedule 40 PVC
- D. Casing Diameter: OD = 2.375"
ID = 2.067"
- E. Depth to Perforations: 6'
- F. Perforated Length: 16'
- Perforation Type: Machined Slot
- Perforation Size: 0.010"
- G. Surface Seal: 3'
- Seal Material: Neat Cement
- H. Seal: 2'
- Seal Material: Bentonite
- I. Filter Pack: 17'
- Pack Material: RMC Lonestar Sand
- Size: #2/12
- J. Bottom Seal: None
- Seal Material: N/A

BORING LOG

Project No. KEI-P91-1201	Boring Diameter 8"	Logged By <i>JGG</i> D.L. <i>LEG 1633</i>
	Casing Diameter 2"	
Project Name Wells Fargo Bank 490 43rd. Street, Oakland	Well Cover Elevation	Date Drilled April 12, 1993
Boring No. MW3	Drilling Method Hollow-stem Auger	Drilling Company Great Sierra Exploration

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati- graphy USCS	Description
		0		Asphalt pavement over sand and gravel base.
				Clayey silt, trace sand and gravel, very stiff, moist, very dark grayish brown and black, mottled (fill).
6/7/8		5	CL	Silty clay, estimated at 10-15% sand and trace gravel, very stiff, moist, dark brown with iron oxide staining, disturbed soil.
			SC	Clayey sand, estimated at 10-15% silt and trace gravel, medium dense, moist, dark brown with iron oxide staining, poor recovery.
9/11/14		10	SM	Silty sand with gravel, trace clay, medium dense, moist to wet, cohesive, dark greenish gray.
6/11/14	▼		ML	Gravelly silt, estimated at 10-15% fine-grained sand, very stiff, moist, olive gray and deep greenish gray, mottled. Sandy silt, very stiff, moist, dark greenish gray and olive, mottled, sand is fine-grained.
9/14/26		15	SM	Silty sand with gravel, estimated at 15-25% silt, gravel to 1-1/2 inch in diameter, olive brown, trace clay below 15.5 feet.
8/8/8			ML	Silt with sand, trace gravel, stiff, moist, light yellowish brown. Clayey silt, trace fine-grained sand, stiff, moist, light yellowish brown.
14/36/30		20		Silt with fine-grained sand, trace gravel to 3/8 inch in diameter, very stiff, moist, olive brown and dark yellowish brown, mottled.

TOTAL DEPTH: 22'

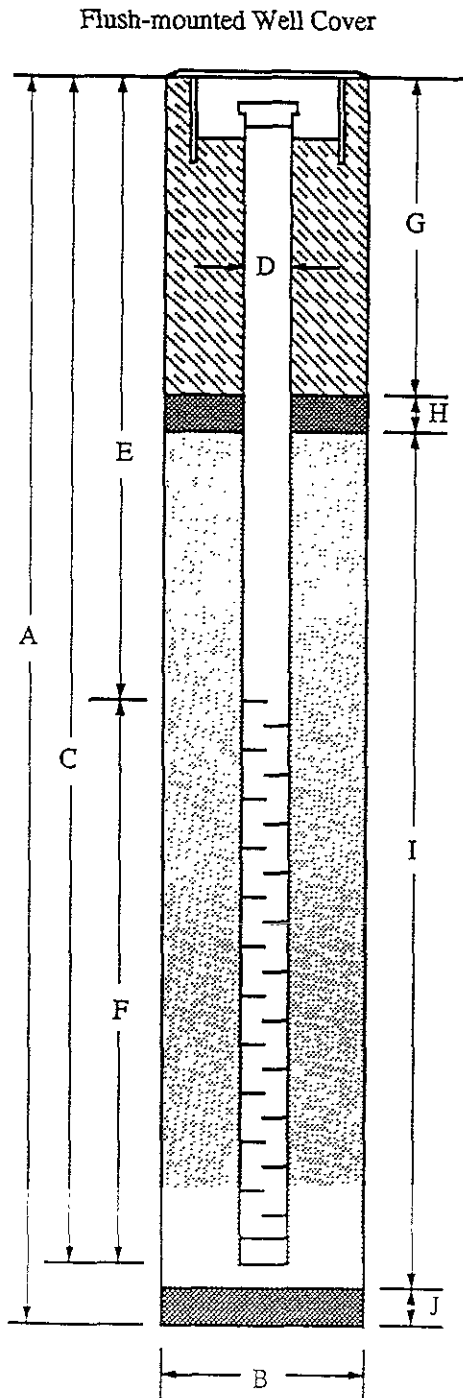
WELL CONSTRUCTION DIAGRAM

PROJECT NAME: Wells Fargo Bank, 490 43rd. Street, Oakland

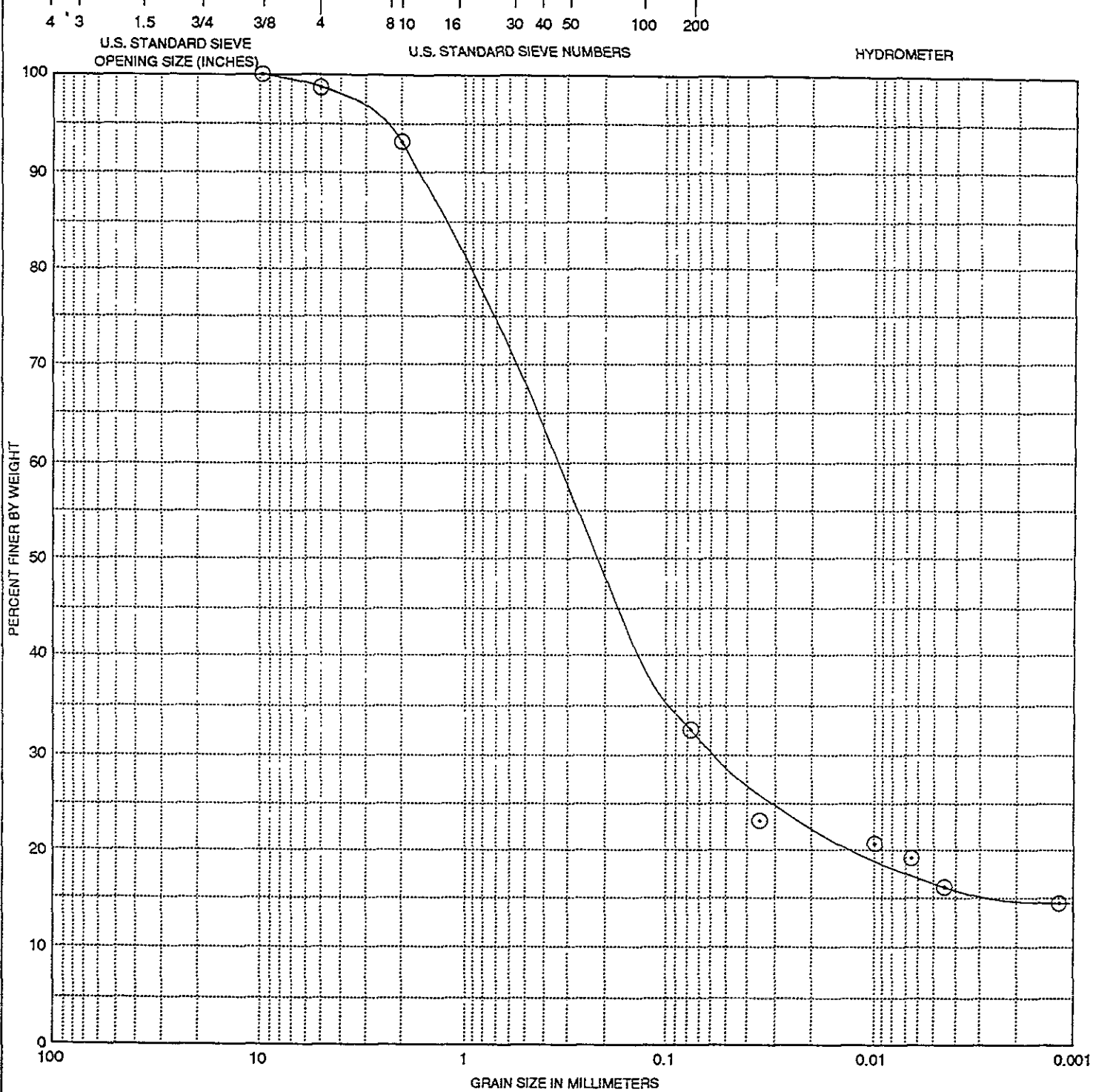
WELL NO.: MW3

PROJECT NUMBER: KEI-P91-1201

WELL PERMIT NO.: ACFC&WCD #53077



- A. Total Depth : 22'
- B. Boring Diameter: 8"
- Drilling Method: Hollow Stem Auger
- C. Casing Length: 22'
- Material: Schedule 40 PVC
- D. Casing Diameter: OD = 2.375"
ID = 2.067"
- E. Depth to Perforations: 6'
- F. Perforated Length: 16'
- Perforation Type: Machined Slot
- Perforation Size: 0.010"
- G. Surface Seal: 3'
- Seal Material: Neat Cement
- H. Seal: 2'
- Seal Material: Bentonite
- I. Filter Pack: 17'
- Pack Material: RMC Lonestar Sand
- Size: #2/12
- J. Bottom Seal: None
- Seal Material: N/A



Cobbles	GRAVEL		SAND			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		

SYMBOL	SAMPLE SOURCE	CLASSIFICATION
	MW3 (14' - 15')	Silty sand with gravel (SM)

WELLS FARGO BAND (WALTER BLUMERT CO.) 490 - 43RD STREET OAKLAND, CALIFORNIA	Job No: Appr: Date Sampled: 4/12/93	PARTICLE SIZE ANALYSIS	PLATE 1
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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Mardo Kaprealian, P.E.

Client Project ID: Wells Fargo Bank, 490 43rd St., Oakland
Sample Matrix: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 304-1289

Sampled: Apr 29, 1993
Received: Apr 29, 1993
Reported: May 11, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 304-1289 MW-1	Sample I.D. 304-1290 MW-2	Sample I.D. 304-1291 MW-3	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	50	290	11,000	8,500	
Benzene	0.5	31	2,400	840	
Toluene	0.5	1.9	51	17	
Ethyl Benzene	0.5	2.7	76	40	
Total Xylenes	0.5	5.4	160	42	
Chromatogram Pattern:		Gasoline	Gasoline	Gasoline	

Quality Control Data

Report Limit Multiplication Factor:	2.0	100	20	1.0
Date Analyzed:	5/3/93	5/3/93	4/30/93	4/30/93
Instrument Identification:	HP-2	HP-2	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	106	108	108	127

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard
Analytes reported as N.D. were not detected above the stated reporting limit

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Scott A. Chieffo
Project Manager



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Starwell Dr., Ste. 400
Concord, CA 94520

Client Project ID: Wells Fargo Bank, 490 43rd St., Oakland
Sample Matrix: Water
Analysis Method: EPA 3510/3520/8015
First Sample #: 304-1289

Sampled: Apr 29, 1993
Received: Apr 29, 1993
Reported: May 11, 1993

Attention: Mardo Kaprealian, P.E.

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 304-1289 MW-1*	Sample I.D. 304-1290 MW-2*	Sample I.D. 304-1291 MW-3*	Sample I.D. Matrix Blank
Extractable Hydrocarbons	50	650	3,600	4,300	
Chromatogram Pattern:		Non-Diesel Mixture (<C16)	Non-Diesel Mixture (<C16)	Non-Diesel Mixture (<C14)	

Quality Control Data

Report Limit Multiplication Factor:	1.0	10	10	1.0
Date Extracted:	5/6/93	5/6/93	5/6/93	5/6/93
Date Analyzed:	5/7/93	5/10/93	5/10/93	5/7/93
Instrument Identification:	HP-3A	HP-3B	HP-3A	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard
Analytes reported as N D were not detected above the stated reporting limit

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Scott A. Chieffo
Project Manager

Please Note * Non-Diesel Mixture is mainly due to paint thinner range.



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Mardo Kaprealian, P.E.

Client Project ID: Wells Fargo Bank, 490 43rd St., Oakland
Sample Matrix: Water
Analysis Method: EPA 3510/3520/8015
First Sample #: 304-1289

Sampled: Apr 29, 1993
Received: Apr 29, 1993
Reported: May 11, 1993

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS as PAINT THINNER

Analyte	Reporting Limit µg/L	Sample I.D. 304-1289 MW-1	Sample I.D. 304-1290 MW-2	Sample I.D. 304-1291 MW-3
Extractable Hydrocarbons	50	600	4,100	5,800

Chromatogram Pattern: Paint Thinner Paint Thinner Paint Thinner

Quality Control Data

Report Limit Multiplication Factor:	1.0	10	10
Date Extracted:	5/6/93	5/6/93	5/6/93
Date Analyzed:	5/10/93	5/10/93	5/10/93
Instrument Identification:	HP-3A	HP-3B	HP-3A

Extractable Hydrocarbons are quantitated against a fresh paint thinner standard.
Analytes reported as N D were not detected above the stated reporting limit

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Scott A. Chieffo
Project Manager



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520

Client Project ID: Wells Fargo Bank, 490 43rd St., Oakland
Matrix: Water

Attention: Mardo Kaprealian, P.E. QC Sample Group 3041289-91

Reported: May 11, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Analyst:	J.F.	J.F.	J.F.	J.F.	K. Wimer
Conc. Spiked:	20	20	20	60	300
Units:	µg/L	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	3LCS043093	3LCS043093	3LCS043093	3LCS043093	BLK050693
Date Prepared:	4/30/93	4/30/93	4/30/93	4/30/93	5/6/93
Date Analyzed:	4/30/93	4/30/93	4/30/93	4/30/93	5/7/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	HP-3A
LCS % Recovery:	116	112	110	115	105
Control Limits:	70-130%	70-130%	70-130%	70-130%	80-120%

MS/MSD					
Batch #:	3041235	3041235	3041235	3041235	BLK050693
Date Prepared:	4/30/93	4/30/93	4/30/93	4/30/93	5/6/93
Date Analyzed:	4/30/93	4/30/93	4/30/93	4/30/93	5/7/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	HP-3A
Matrix Spike % Recovery:	120	120	115	122	105
Matrix Spike Duplicate % Recovery:	120	115	110	118	105
Relative % Difference:	0.0	4.2	4.4	3.3	0.0

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Please Note

The LCS is a control sample of known interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

Scott A. Chieffo
Project Manager



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520

Client Project ID: Wells Fargo Bank, 490 43rd St., Oakland

Attention: Mardo Kaprealian, P.E. QC Sample Group: 3041289-91

Reported: May 11, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8015	EPA 8015	EPA 8015	EPA 8015
Analyst:	K. Wimer	K. Wimer	K. Wimer	K. Wimer
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	May 7, 1993	May 10, 1993	May 10, 1993	May 7, 1993
Sample #:	304-1289	304-1290	304-1291	Matrix Blank

Surrogate				
% Recovery:	115	116	86	93

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Scott A. Chieffo
Project Manager

% Recovery	$\frac{\text{Conc of M.S.} - \text{Conc of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference	$\frac{\text{Conc. of M.S.} - \text{Conc of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc of M.S.D.}) / 2} \times 100$

CHAIN OF CUSTODY

SAMPLER			SITE NAME & ADDRESS					ANALYSES REQUESTED				TURN AROUND TIME:	
Joe			Well Fargo Bank (Walter Blumert Co.) 490 43rd St. Oakland									Regular	
WITNESSING AGENCY			SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPHC	BTXE	TPHD	TPH as Paint Thinner (EPA 3550)	REMARKS
MW-1	4-29-93	9:35 A.M.		✓	✓		4	MW	✓	✓	✓		3041289 AD 1290 AD 1291 AD
MW-2	"	"		✓	✓		4	"	✓	✓	✓		
MW-3	"	10:45 A.M.		✓	✓		4	"	✓	✓	✓		
Relinquished by: (Signature)			Date/Time	Received by: (Signature)				The following MUST BE completed by the Laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? <u>Y</u> 2. Will samples remain refrigerated until analyzed? <u>Y</u> 3. Did any samples received for analysis have head space? <u>N</u> 4. Were samples in appropriate containers and properly packaged? <u>Y</u> _____ <u>SV</u> _____ <u>FS</u> _____ <u>4/29/93</u> Signature Title Date					
Relinquished by: (Signature)			Date/Time	Received by: (Signature)									
Relinquished by: (Signature)			Date/Time	Received by: (Signature)									
Relinquished by: (Signature)			Date/Time	Received by: (Signature)									



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520

Client Project ID: Wells Fargo, 490 43rd St., Blumert/Oakland
Sample Matrix: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 304-0585

Sampled: 4/12&4/13/93
Received: Apr 14, 1993
Reported: Apr 27, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 304-0585 MW1(5)	Sample I.D. 304-0586 MW1(9.5)	Sample I.D. 304-0587 MW1(11.5)	Sample I.D. 304-0588 MW2(5)	Sample I.D. 304-0589 MW2(7.5)*	Sample I.D. 304-0590 MW2(10)*
Purgeable Hydrocarbons	1.0	N.D.	20	210	N.D.	66	1,000
Benzene	0.005	N.D.	0.069	1.2	N.D.	0.24	3.4
Toluene	0.005	N.D.	0.019	0.90	N.D.	N.D.	N.D.
Ethyl Benzene	0.005	N.D.	0.030	1.2	N.D.	0.026	N.D.
Total Xylenes	0.005	N.D.	0.090	2.6	N.D.	0.35	20
Chromatogram Pattern:		--	Gasoline	Gasoline	--	Gasoline and Non-Gasoline Mixture (>C9)	Gasoline and Non-Gasoline Mixture (>C9)

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	100	1.0	5.0	250
Date Analyzed:	4/16/93	4/16/93	4/16/93	4/16/93	4/20/93	4/16/93
Instrument Identification:	HP-4	HP-4	HP-4	HP-4	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	106	98	100	103	75	93

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL


Scott A. Chieffo
Project Manager

Please Note

* Non-Gasoline Mixture is probably paint thinner



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E.	Client Project ID: Wells Fargo, 490 43rd St., Blumert/Oakland Sample Matrix: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 304-0591	Sampled: 4/12&4/13/93 Received: Apr 14, 1993 Reported: Apr 27, 1993
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TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 304-0591 MW2(11.5)*	Sample I.D. 304-0592 MW3(5)	Sample I.D. 304-0593 MW3(10)*	Sample I.D. 304-0594 MW3(12)*	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	1.0	710	N.D.	2,000	630	
Benzene	0.005	3.0	N.D.	2.6	0.86	
Toluene	0.005	0.71	N.D.	0.88	0.12	
Ethyl Benzene	0.005	0.68	N.D.	0.74	1.1	
Total Xylenes	0.005	14	N.D.	28	2.3	

Chromatogram Pattern:	Gasoline and Non-Gasoline Mixture (>C9)	--	Gasoline and Non-Gasoline Mixture (>C9)	Gasoline and Non-Gasoline Mixture (>C9)
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Quality Control Data

Report Limit Multiplication Factor:	100	1.0	100	25	1.0
Date Analyzed:	4/16/93	4/16/93	4/16/93	4/20/93	4/16/93
Instrument Identification:	HP-4	HP-4	HP-4	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	88	102	70	74	104

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard
Analytes reported as N.D. were not detected above the stated reporting limit

SEQUOIA ANALYTICAL

Scott A. Chierfo
Project Manager

Please Note * "Non-Gasoline Mixture" is probably paint thinner



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Mardo Kaprealian, P.E.

Client Project ID: Wells Fargo, 490 43rd St., Blumert/Oakland
Sample Matrix: Soil
Analysis Method: EPA 3550/8015
First Sample #: 304-0585

Sampled: 4/12&4/13/93
Received: Apr 14, 1993
Reported: Apr 27, 1993

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 304-0585 MW1(5)	Sample I.D. 304-0586 MW1(9.5)*	Sample I.D. 304-0587 MW1(11.5)^	Sample I.D. 304-0588 MW2(5)	Sample I.D. 304-0589 MW2(7.5)#	Sample I.D. 304-0590 MW2(10)#
Extractable Hydrocarbons	1.0	N.D.	2.2	6.9	N.D.	9.3	190
Chromatogram Pattern:		--	Diesel and Non-Diesel Mixture (<C16)	Diesel and Non-Diesel Mixture (<C16)	--	Non-Diesel Mixture (<C16)	Non-Diesel Mixture (<C16)

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	20
Date Extracted:	4/21/93	4/21/93	4/21/93	4/21/93	4/21/93	4/21/93
Date Analyzed:	4/23/93	4/23/93	4/23/93	4/23/93	4/22/93	4/23/93
Instrument Identification:	HP-3A	HP-3A	HP-3B	HP-3B	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard
Analytes reported as N.D. were not detected above the stated reporting limit

SEQUOIA ANALYTICAL


Scott A. Chieffo
Project Manager

Please Note

- * "Non-Diesel Mixture" is probably gasoline
- ^ "Non-Diesel Mixture" appears to be a mixture of gasoline and paint thinner
- # "Non-Diesel Mixture" is mainly paint thinner



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520

Client Project ID: Wells Fargo, 490 43rd St., Blumert/Oakland
Sample Matrix: Soil
Analysis Method: EPA 3550/8015
First Sample #: 304-0591

Sampled: 4/12&4/13/93
Received: Apr 14, 1993
Reported: Apr 27, 1993

Attention: Mardo Kaprealian, P.E.

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 304-0591 MW2(11.5)*	Sample I.D. 304-0592 MW3(5)*	Sample I.D. 304-0593 MW3(10)*	Sample I.D. 304-0594 MW3(12)*	Sample I.D. Matrix Blank
Extractable Hydrocarbons	1.0	180	4.7	590	53	
Chromatogram Pattern:		Non-Diesel Mixture (<C16)	Non-Diesel Mixture (<C16)	Non-Diesel Mixture (<C16)	Non-Diesel Mixture (<C16)	

Quality Control Data

Report Limit Multiplication Factor:	20	1.0	50	1.0	1.0
Date Extracted:	4/21/93	4/21/93	4/21/93	4/21/93	4/21/93
Date Analyzed:	4/23/93	4/22/93	4/23/93	4/22/93	4/23/93
Instrument Identification:	HP-3B	HP-3B	HP-3B	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Please Note. * "Non-Diesel Mixture" is mainly paint thinner

Scott A. Chieffo
Project Manager



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E.	Client Project ID: Wells Fargo, 490 43rd St., Blumert/Oakland Sample Matrix: Soil Analysis Method: EPA 3550/8015 First Sample #: 304-0585	Sampled: 4/12&4/13/93 Received: Apr 14, 1993 Reported: Apr 27, 1993
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TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS as PAINT THINNER

Analyte	Reporting Limit mg/kg	Sample I.D. 304-0585 MW1(5)	Sample I.D. 304-0586 MW1(9.5)	Sample I.D. 304-0587 MW1(11.5)	Sample I.D. 304-0588 MW2(5)	Sample I.D. 304-0589 MW2(7.5)	Sample I.D. 304-0590 MW2(10)
Extractable Hydrocarbons	5.0	N.D.	N.D.	11	N.D.	15	320
Chromatogram Pattern:		--	--	Paint Thinner and Non-Paint Thinner Mixture (<C20)	--	Paint Thinner	Paint Thinner

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	20
Date Extracted:	4/21/93	4/21/93	4/21/93	4/21/93	4/21/93	4/21/93
Date Analyzed:	4/23/93	4/23/93	4/23/93	4/23/93	4/22/93	4/23/93
Instrument Identification:	HP-3A	HP-3A	HP-3B	HP-3B	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh paint thinner standard
Analytes reported as N.D. were not detected above the stated reporting limit

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Scott A. Chieffo
Project Manager

Please Note: * Non-Paint Thinner Mixture appears to be in the gasoline and diesel range



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

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---	--	---

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS as PAINT THINNER

Analyte	Reporting Limit mg/kg	Sample I.D. 304-0591 MW2(11.5)	Sample I.D. 304-0592 MW3(5)	Sample I.D. 304-0593 MW3(10)	Sample I.D. 304-0594 MW3(12)
Extractable Hydrocarbons	5.0	310	7.6	1,000	89

Chromatogram Pattern: Paint Thinner Paint Thinner Paint Thinner Paint Thinner

Quality Control Data

Report Limit Multiplication Factor:	20	1.0	50	1.0
Date Extracted:	4/21/93	4/21/93	4/21/93	4/21/93
Date Analyzed:	4/23/93	4/22/93	4/23/93	4/22/93
Instrument Identification:	HP-3B	HP-3B	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh paint thinner standard
Analytes reported as N D were not detected above the stated reporting limit

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Scott A. Chieffo
Project Manager



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520

Client Project ID: Wells Fargo, 490 43rd St., Blumert/Oakland
Matrix: Soil

Attention: Mardo Kaprealian, P.E. QC Sample Group 3040585-594

Reported: Apr 27, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Analyst:	J.F.	J.F.	J.F.	J.F.	K. Wimer
Conc. Spiked:	0.40	0.40	0.40	1.2	10
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LCS Batch#:	2LCS041693	2LCS041693	2LCS041693	2LCS041693	BLK042193
Date Prepared:	4/16/93	4/16/93	4/16/93	4/16/93	4/21/93
Date Analyzed:	4/16/93	4/16/93	4/16/93	4/16/93	4/23/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	HP-3B
LCS % Recovery:	110	110	110	125	111
Control Limits:	70-130%	70-130%	70-130%	70-130%	80-120%

MS/MSD					
Batch #:	3040688	3040688	3040688	3040688	3040585
Date Prepared:	4/16/93	4/16/93	4/16/93	4/16/93	4/21/93
Date Analyzed:	4/16/93	4/16/93	4/16/93	4/16/93	4/23/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	HP-3B
Matrix Spike % Recovery:	105	105	109	123	127
Matrix Spike Duplicate % Recovery:	105	105	109	123	127
Relative % Difference:	0.0	0.0	0.0	0.0	0.0

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Scott A. Chieffo
Project Manager

Please Note:

The LCS is a control sample of known interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520

Client Project ID: Wells Fargo, 490 43rd St., Blumert/Oakland

Attention: Mardo Kaprealian, P.E. QC Sample Group: 3040585-594

Reported: Apr 27, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8015	EPA 8015	EPA 8015	EPA 8015	EPA 8015	EPA 8015	EPA 8015
Analyst:	K. Wimer	K. Wimer	K. Wimer	K. Wimer	K. Wimer	K. Wimer	K. Wimer
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Apr 23, 1993	Apr 23, 1993	Apr 23, 1993	Apr 23, 1993	Apr 22, 1993	Apr 23, 1993	Apr 23, 1993
Sample #:	304-0585	304-0586	304-0587	304-0588	304-0589	304-0590	304-0591

Surrogate % Recovery:	110	104	94	95	99	97	97
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Scott A. Chieffo
Project Manager

% Recovery.	$\frac{\text{Conc of M S} - \text{Conc of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference	$\frac{\text{Conc of M S} - \text{Conc of M.S.D}}{(\text{Conc of M S} + \text{Conc of M.S.D}) / 2} \times 100$



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QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8015	EPA 8015	EPA 8015	EPA 8015
Analyst:	K. Wimer	K. Wimer	K. Wimer	K. Wimer
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Apr 22, 1993	Apr 23, 1993	Apr 22, 1993	Apr 23, 1993
Sample #:	304-0592	304-0593	304-0594	Matrix Blank

Surrogate				
% Recovery:	86	107	84	87

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Scott A. Chieffo
Scott A. Chieffo
Project Manager

% Recovery:	$\frac{\text{Conc. of M S} - \text{Conc. of Sample}}{\text{Spike Conc Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M S} - \text{Conc. of M.S.D.}}{(\text{Conc. of M S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

CHAIN OF CUSTODY

SAMPLER <i>[Signature]</i>		SITE NAME & ADDRESS WELLS FARGO - BLUMERT / OAKLAND 490 43RD ST.							ANALYSES REQUESTED					TURN AROUND TIME: REGULAR			
WITNESSING AGENCY <i>[Signature]</i>									TOXIC	DIANE	TRH-D	TOX AS QUANT	THINER				
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TOXIC	DIANE	TRH-D	TOX AS QUANT	THINER			REMARKS	
MW1(5)	4/12/93		X		X		1	SEE SAMPLE ID NO.	X	X	X	X				3040585 586 587 588 589 590 591 592 593	
MW1(9.5)	4/12/93		X		X		1	↓	X	X	X	X					
MW1(11.5)	4/12/93		X		X		1		X	X	X	X					
MW2(5)	4/13/93		X		X		1		X	X	X	X					
MW2(7.5)	4/13/93		X		X		1		X	X	X	X					
MW2(10)	4/13/93		X		X		1		X	X	X	X					
MW2(11.5)	4/13/93		X		X		1		X	X	X	X					
MW3(5)	4/12/93		X		X		1		X	X	X	X					
MW3(10)	4/12/93		X		X		1		X	X	X	X					
Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 4/14/93 0945	Received by: (Signature) <i>[Signature]</i>		The following MUST BE completed by the laboratory accepting samples for analysis:													
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		1. Have all samples received for analysis been stored in ice? Y													
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		2. Will samples remain refrigerated until analyzed? Y													
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		3. Did any samples received for analysis have head space? N													
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		4. Were samples in appropriate containers and properly packaged? Y													
				Signature: <i>EV</i> Title: <i>FS</i> Date: <i>4/14/93</i>													



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Kaprealian Engineering, Inc.	Client Project ID: Wells Fargo Bank, 490 43rd St., Oakland	Sampled: Apr 22, 1993
2401 Stanwell Dr., Ste. 400	Sample Descript: Soil, MW 3(14-15)	Received: Apr 22, 1993
Concord, CA 94520	Method of Analysis: ASTM D422-63	Analyzed: Apr 30, 1993
Attention: Mardo Kaprealian, P.E.	Lab Number: 304-0988	Reported: May 5, 1993

PARTICLE SIZE DISTRIBUTION BY SIEVE AND HYDROMETER

SIEVE TEST

- (A) TOTAL WEIGHT OF SAMPLE:
- (B) WEIGHT RETAINED IN NO. 10 SIEVE:
- (C) % PASSING NO. 10 SIEVE:

501.17g
36.36g
92.74

SIEVE TEST FOR
WEIGHT RETAINED
IN NO. 10 SIEVE

SIEVE SIZE	WEIGHT RETAINED, g	% RETAINED	CUMULATIVE % RETAINED	CUMULATIVE % PASSING
1 1/2 inch	0.0	0.0	0.0	100
3/8 inch	0.0	0.0	0.0	100
No. 4	10.34	2.06	2.06	98
No. 10	26.02	5.19	7.25	93
No. 200	299.27	59.71	66.96	33

HYDROMETER TEST

ELAPSED TIME (T)	TEMP. °C	HYDROMETER READING (H)	CORRECTED READING (R)	(L)	PARTICLE DIAM. (S)	% SUSPENDED (P)
2.0	22	20	16	13.7	0.035	23.65
5.0	22	20	16	13.7	0.022	23.65
10	22	19	15	13.8	0.016	22.18
15	22	18	14	14	0.013	20.7
25	22	18	14	14	0.010	20.7
40	22	17	13	14.2	0.0079	19.22
60	22	17	13	14.2	0.0065	19.22
90	22	16	12	14.3	0.0053	17.74
120	22	15	11	14.5	0.0046	16.26
1440	22	14	10	14.7	0.0013	14.78

- WEIGHT OF SOIL USED IN HYDROMETER TEST (D):
- HYGROSCOPIC MOISTURE CORRECTION FACTOR (G):
- SPECIFIC GRAVITY (ASSUMED):
- DISPERSING AGENT CORRECTION FACTOR (E):
- MENISCUS CORRECTION FACTOR (F):
- TEMP / SPEC. GRAVITY DEPENDANT CONSTANT (K):

65 g
0.965
2.65
3.0
1.0
0.01332

FORMULAS:
 $R = H - E - F$
 $S = K [\text{SQRT} (L / T)]$
 $P = (R / W) 100$
 $W = (J \cdot 100) / C$
 $J = D \cdot G$

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 Scott A. Chieffo
 Project Manager

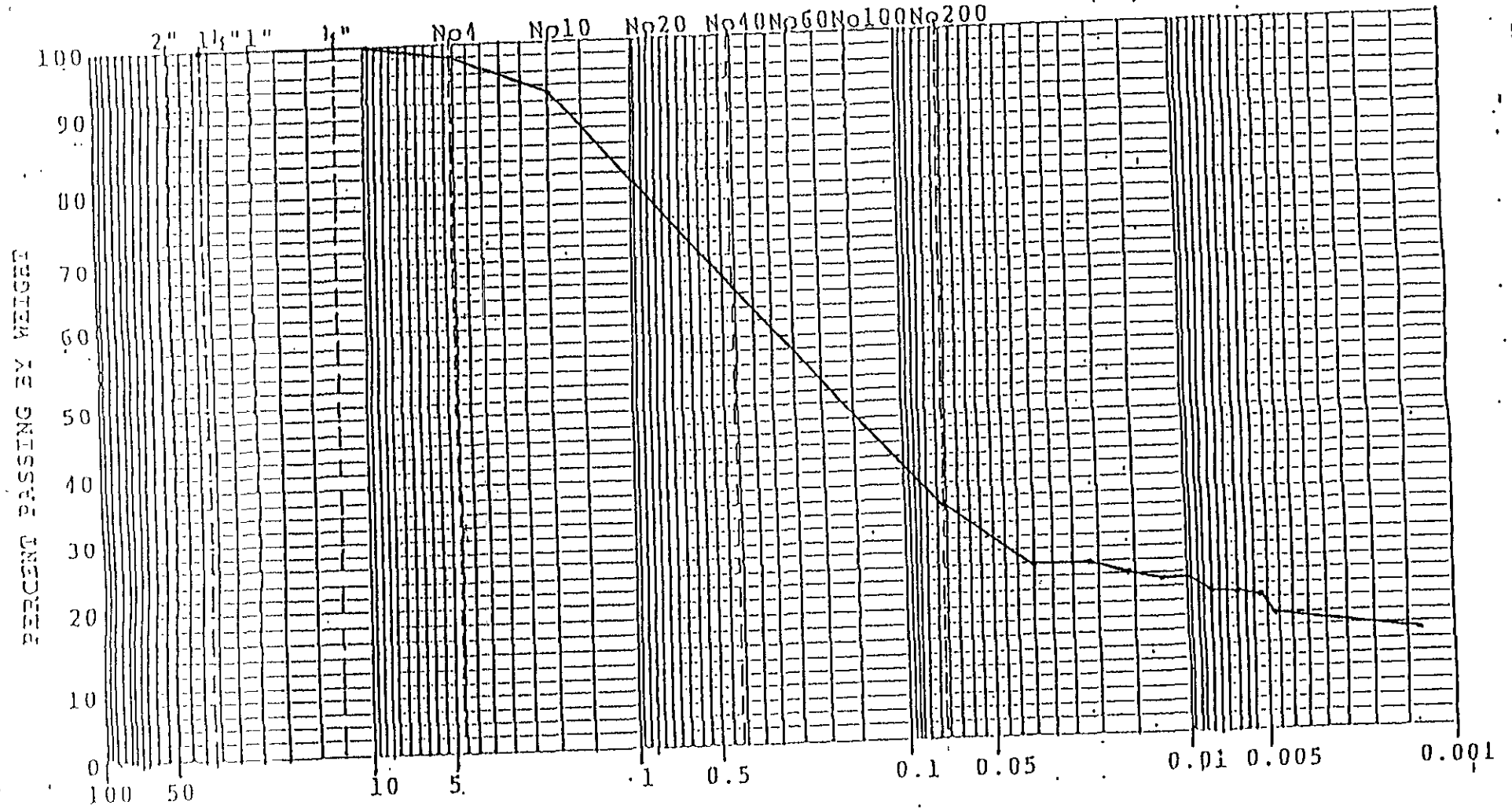
WELLS FARGO BANK, 490 43rd ST., OAKLAND

SAMPLE DESCRIPTION: MW 3 (14-15)

LABORATORY NUMBER: 9304A33 (3040988)

GRUIN	2%
SAND	65%
SILT	17%
CLAY	16%

U.S. STANDARD SIEVE SIZES



GRAIN DIAMETER IN MILLIMETERS

COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES
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SAND

